Technology, virtuality and utopia

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Chapter 7

Technology, virtuality and utopia

Governmentality in an age of autonomic computing

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Introduction

> The machines, structures, and systems of modern material culture can be accurately judged not only for their contributions to efficiency and productivity and their positive and negative environmental side effects, but also for the ways in which they can embody specific forms of power and authority.
>
> (Winner 1986)

This chapter attempts to identify the repercussions for the constitution, experience and understanding of human personality and legal subjectivity, of the increasingly statistical governance of the 'real' ensuing from a convergence of contemporary technological and socio-political evolutions. Epitomised by the rise of autonomic computing in the sectors of security and marketing, this epistemic change in our relation to the 'real' institutes a specific regime of intelligibility of the physical world and its inhabitants. This new 'perceptual' regime, it will be argued, affects a specific and essential attribute of the human subject, which may be called his 'virtuality' (as opposed to 'actuality'). This 'virtuality', which acts as preserve for individuation over time, presupposes the recognition of 'differance' (being over time) and potentiality (spontaneity) as essential qualities of the human being. This virtual quality of the self, being a precondition to the experience of 'utopia' (spaces without location, according to Foucault), also conditions cultural, social and political vitality. Reflecting on the potential impacts of autonomic computing on human personality and legal subjectivity in terms of the governmental rationality these new technological artefacts actualise allows for a normative evaluation of the impact of autonomic computing on both individual self-determination and collective self-government.

The subject itself is highly uncertain. 'Autonomic computing' *per se*, is difficult to circumscribe as an *object* for legal theoretical inquiry. IBM, which first coined the term, explicitly acknowledges that 'the definition of autonomic computing will likely transform as contributing technologies mature'. IBM nevertheless lists eight defining characteristics for it, and presents the vision of 'computer systems that regulate themselves much in the same way our autonomic nervous system regulates

and protects our bodies'. The defining capabilities of autonomic computing include self-knowledge (the system must somehow know itself and be able to identify its own components), autonomie and dynamic self-reeonfiguration and adjustment, constant optimisation of its own working, self-prevention and reparation of malfunctioning caused by internal or external events, detection of and protection from attacks against the system's security and integrity, context awareness and autonomic adaptation of itself or even the environment to the circumstances, ability to anticipate and optimise resources consumption while keeping its complexity hidden. It must marshal I/T resourees to shrink the gap between the business or personal goals of the user, and the I/T implementation necessary to achieve those goals – without involving the user in that implementation.[1]

As of today, autonomic computing is nothing more than a 'vision', which is not (or not yet) embodied in any speeific 'artefact', scenario or application that would give rise to *actual practices* from which to start our study. As a 'vision', or a 'paradigm shift',[2] autonomic computing is aimed at facilitating and enhancing the functioning of a wide variety of information systems, going from the traditional laptop to the most complex computer-sensors networks one may imagine being involved in futuristic scenarios of ambient intelligence. The prospective stance one is unavoidably caught in does not allow for any clear view of the future.

Other difficulties arise from the radical instability of the concepts of human identity (or human personhood) and legal subjectivity. Human identity appears a concept continuously expanding in scope (and whose expansion has been received as the hallmark of civilisational progress) but remains definitionally uncertain. Legal subjectivity is not a firmer concept, obviously: both assumed and constituted by law,[3] it appears irremediably self-referential, or enclosed in a positivity that can never completely be relied upon.

Assessing how our notions of gestures and agency, subjectivity and identity mutate in the presence of real time, dynamieally varying media managed by autonomic computing,[4] and how legal and moral responsibility must be understood in circumstances where self-awareness and intentionality appear somewhat dispersed, dissolved or distributed in a human-technological network, is obviously crucial. Yet, it is not my intention to assess whether these new information systems exhibit the requisite properties of agents and, if they do, whether granting them the status of agents would curtail agency, identity, autonomy in humans,[5] nor to inquire about the more recently typologised types of 'eyborg intentionality' 'which all involve specific blends of the human and the technological' (Verbeek 2008: 387–95). In this chapter, the mere ambition I have is to slightly displace the point of view from which to consider the issues that have so far been addressed in order to inscribe the debate in the epistemie and assumingly political context of the day.

My departure point is not a contemplation of how human *subjects* actively interact with autonomic computing systems (there are currently no actual instances where this happens except in laboratory, experimental conditions where prototypes are being developed), but how human subjects are taken as *objects* of observation, classification and forward-looking evaluation (Gandy 2010) by such autonomic

systems, and what the consequences are of the 'production' of such statistically based knowledge. Said in other words, I wish to reflect on how these autonomic machines *translate* or *transcribe* the physical world, its inhabitants, their trajectories, behaviours, actions, choices, preferences, attitudes. . .Because there is no neutral transcript of the 'real', I wish to identify the underlying 'bias' governing the regime of visibility and of intelligibility implemented in this way.

Autonomic computing and governmentality

The questions I am concerned with are the following: what are the specificities of the new modes of intelligibility of the 'real', or of the new rationality that such technologies inaugurate? What 'axial principles'[6] does autonomic computing serve? The politically relevant question is thus: what is the kind of power that the new regimes of (in)visibility and intelligibility accompanying the deployment of such technologies are aimed at and/or are capable of hringing forward? To what type of governmental rationality are these regimes instrumental? And, finally, what impacts would the deployment of such artefacts have on the processes of subjectivation and socialisation, and on the collective capacity to invent new political and social ways of life? f realise that discussing all this in a single chapter can only be justified because a book length meditation would be nearly as inadequate.

The following reflections are much influenced by Foucauldian scholarship and 'governmentality studies', as an almost instinctive point of entry into what is to me a new territory of inquiry consists of considering the impact of autonomic computing (embedded as it is aimed to be in systems of ubiquitous computing and ambient intelligence)[7] not *directly* on our understanding of human identity and legal subjectivity, but to see this impact through the transformations of knowledge and power that such technological developments implement. The perspectives suggested by the notion of autonomic computing *per se*, 'an approach to self-managed computing systems with a minimum of human interference', inspired by the human 'body's autonomic nervous system, which controls key functions without conscious awareness or involvement' raise fascinating and troubling issues, but, I wish to argue, these issues do not have much to do with the quasi-organic model of development and maintenance envisioned in autonomic computing, which humans have always shared with all other living organisms without having felt threatened in their specificity as human beings. The issues I am concerned with rather relate to the 'regimes of truth' (Foucault 1980: 93), the categorisations and (sometimes performative) predictions these systems are capable to establish, maintain and propagate through a series of applications ranging from security to entertainment, passing by marketing, health management, etc. Because these 'truth regimes' will result from technological (rather than human) observation, detection, classification and forward-looking (and thus predictive rather than purely descriptive) evaluation processes, individuals, diversely apprehended through the prism of profiles built on numbers and data, will not retain much power over their recognition, interpellation, classification by and within the systems.

> Our capacity to reflect upon ourselves, to tell the truth about ourselves, is correspondingly limited by what the discourse, the regime, cannot allow into speakability.
>
> (Butler 2005: 121)

Fragmented as they will be into a myriad of 'correlatable' data and aggregated with others with whom they do not share anything more than the simple fact of having exhibited similarly correlated biographical, behavioural, or other elements, the profiled individual will not necessarily be able to contest or resist the autonomic assignation of profiles and the praetical consequences ensuing in terms of access to places, opportunities, and benefits. This attests, in a radical manner, of the fact that identity, that which results from an identification process, can only be accounted for from a perspective which is not that of the subject himself, but of others.[8]

> Through the lens of representations thrown off by these practices, individuals, once understood as moral or rational actors, are increasingly understood as locations in actuarial tables of variations. This shift from moral agent to actuarial subject marks a change in the way power is exercised on individuals by the state and other large organizations (. . .) The effects can be discerned on the way we understand ourselves, our communities, and our capacity for moral judgment and political action.
>
> (Simon 1988: 772)

What I am concerned with is precisely the relation between, on the one hand, the process through which the physical world and its inhabitants are made visible and meaningful, through which states of affairs are seen and evaluated, through which evidences are produced and given, in a 'world of autonomic computing', and, on the other hand, practices of 'government', where

> '[G]overnment' [does] not refer only to political structures or to the management of states; rather, it [designates] the way in which the conduct of individuals or groups might be directed. (. . .) It [does] not only cover the legitimately constituted forms of political or economic subjection but also modes of action, more or less considered or calculated, which [are] designed to act upon the possibilities of action of other people. To govern in this sense is to structure the possible field of action of others.
>
> (Foucault 1982: 790 and Foucault 1994: 635–65)

I thus refer to governmentality in a Foucauldian (Foucault 1991a) sense as the 'conduct of conduct', identifying how the new regimes of visibility and intelligibility implemented by the considered technologies impact on how we conduct ourselves, how we attempt to conduct others, and how others attempt to control our conduct.

> Governmental rationality [is] a way or system of thinking about the nature of the practice of government (who can govern; what governing is; what or who is governed), capable of making some form of that activity thinkable and practicable both to its practitioners and to those upon whom it was practiced.
>
> (Gordon 1991: 3)

At a time where the next step in the development of our information society may be a turn towards autonomic computing, I believe that borrowing from the governmentalist perspective[9] may be highly suggestive and helpful to assess why, and, above all, *at what price* autonomic detection, classification and forward-looking evaluation would gradually assist or even replace human observation.

Is the turn towards autonomic computing a 'natural' or an 'ideological' gesture?

Yet, neither ubiquitous computing, ambient intelligence or autonomic computing *per se* do seem to have awoken the interest of scholars involved in governmentality studies, despite the obvious impact that such information infrastructure may have on how power is being exercised on individuals and populations, through the new regimes of visibility and intelligibility of the repartition of risks, merits, abilities, deserts, opportunities, propensities, etc. they instaurate. One reason for this might be that autonomic computing, and the applications it is aimed to sustain, appear somewhat 'natural', with the connotations that such 'naturality' entails in terms of political and epistemological neutrality.

Presented as a technological solution to the growing complexity of the information technology infrastructure, the concept of autonomic computing coined by IBM seems to indicate the '*natural* next step' (although advertised as a 'paradigm shift') in the development of computer science. By virtue of having its inspiration in biological ontogeny[10] ('a systemic view of computing modelled after a self-regulating biological system'), where computers would take care of themselves and of their own development, the concept of 'autonomic computing' suggests a reduction of the distance separating the domain of 'artefacts' from that of 'nature'.

The word *nature* has always been ambiguous though. The Greek notion of *physis*, for example, is broader than the French notion of *nature*, whose Latin origin links to the verb *naître* in French (nascor) and to a notion of *natality* or genesis of things. By contrast, the Aristotelian notion of nature or *physis* involves – rather than a fixed origin – an innate thrust towards alteration, transformation, metamorphoses, a movement guided by an internal teleology (Aristotle 1979: 366). The Continental tradition seems attached to a concept of nature definitionally opposed to the teleology of artificiality; a concept of nature as something spontaneous rather than created, and that attaches value to the integrity of the spontaneous or inherent teleology of organisms, given in the past. Typically, the French romantic conception of nature tends to consider that what is natural is what has been generated

without artificial, human intervention. All this cannot give any account of the proliferating 'hybridity' (Latour 2005).

Anyway, the gradual withdrawal of human intervention and the correlative increase of computers' autonomic capacities would allow them to become the autonomic (un)conscious 'brain' of a variety of increasingly prosthetic (functioning as 'prosthesis' for human beings) information systems. Such integration in systems of 'smart environments' with which the 'user' interacts 'naturally' and invisibly, added to its growing self-sufficiency, may reinforce the impression that the turn towards autonomic computing, and the increasing reliance one places in such systems, are quasi-natural evolutions of computer technologies and, arguably, also of our own species. After such endorsement, the remaining questions would only be whether, to what extent and with what consequences these new autonomic artefacts are taking over some of the attributes that were previously thought of as distinctive of human identity and legal subjectivity, whatever one thinks these attributes are (agency, intentionality, free will, emotions, etc.).

Yet, unlike living organisms, technologies never result from a spontaneous germination, but follow a teleology of artificiality. Even as machines become increasingly autonomic and 'intelligent', they remain dependent – be it only for their existence – on an initial design, intention, conception, script or scenario, and are from the start (whatever the shape they may actually take afterwards) embedded with their designers' conscious or unconscious visions of the world, and projections or expectations of what the future will be or should be, how human beings 'normally' or 'expectedly' behave, etc.:

> Designers define actors with specific tastes, competences, motives, aspirations, political prejudices, and the rest, and they assume that morality, technology, science and economy will evolve in particular ways. A large part of the work of innovators is that of *inscribing* this vision of (or prediction about) the world in the technical content of the new object. I will call the end product of this work a 'script' or a 'scenario'.
>
> (Akrich 1992: 208)

Technologies are always designed with a specific purpose in mind, in the context of specific problems and applications. One cannot blind oneself to the recent transformations of the modes of knowledge production, increasingly oriented by agenda and interests of funding agencies (Stengers 2002). These agencies identify *what the problems are* for which technological solutions must be found. Michel Foucault emphasised how a given solution to a given problem is only ever constructed according to how the problem is perceived in the first place, though a 'work of thought', a process of 'problematisation'. This 'problem-setting' (Finlayson 2006: 541–57) activity or this 'problematisation' has political implications. It is of course a truism to say that the development of technology is never random nor in any sense natural, but responds to the specific needs that manage to federate enough political and economic support to appear worth developing.[11]

Not endorsing what is presented to us as the next paradigm shift in computer science as something 'natural' (in the popular sense of the term), nor the correlated connotations of political and ideological neutrality this reference to nature still (misleadingly) entails, paves the way for understanding the problematisation[12] – 'a process by which a putative problem is seen as requiring special attention especially by government' (Welch 2008: 229) – that brought the notion of autonomic computing to the fore (Foucault 1991b: 381–90).

Moving towards autonomic computing is not a self-supporting technological paradigm change, bringing a purely technological solution to a purely technological problem and causing, as collateral or side effects, fascinating uncertainties with regard to the meaning of human identity and legal subjectivity. To what 'problems' is autonomic computing intended to bring a solution? How are these problems selected and identified? Why are these problems sufficiently high on the list of priorities as to make autonomic computing appear the 'natural next step' to go? The question – *why?* – immediately refers to problematisation.

Towards a statistical (or actuarial) governance of the 'real'

> What is real – if something like that can ever be supposed to exist in itself – does not matter; what matters is what is taken as real and in modernity what is taken as real is statistically recorded.
>
> (Skouteris 2004: 15)

Ubiquitous and autonomous computing, multimodal observation, ambient intelligence and all these new technological *infrastructures* purporting to make our life safer, easier, more efficient and enjoyable are the next step in the colonisation of the physical world by digital technology. They enrich our daily life's cognitive experience with dynamic and individualised informational content. Their celebrated capacity to detect, sort, evaluate and, most importantly, predict our desires and preferences, needs and propensities, and to customise and adjust deliveries, services and offers to our individual profile as if it knew us better than ourselves spares us time and discomfort. Their aptitude to target more accurately and objectively the individuals whose trajectories and attitudes put at a higher than average probability of committing a criminal offence or being involved in some way or another in a terrorist attack, allowing more selective security screenings and leaving the 'good guys' in peace, renders counter-terrorism policies less obtrusive to citizens' everyday life. The learning system ends knowing what your needs are, and who the bad guys are. Unobtrusively, it renders your environment responsive to your unique personality (yes, you are unique, and the system will reassure you on that point) whilst eliminating most frictions with the unexpected, unpleasant, time-consuming, tiresome aspects of choices or routine security checks.

In order to perform their tasks as intelligent interfaces or smart mediators (and, possibly, agents) between human users and the humanly untameable complexity

of the global digital and physical universe, and to deliver their individualised, dynamie functionalities (whatever these are), the new information infrastructures 'translate' or 'transeribe' the physical space and its inhabitants (that's us) into constantly evolving sets of data points. The optimal functioning of this mode of statistical intelligibility presupposes the non-selective collection of as-much data as possible, *a priori* independent of any specific finality. At odds with the modern ambitions of deduetive rationality linking observed phenomena (that is, phcnomena previously seleeted, on explicit or implicit criteria of *interest*, as objects for observation and analysis) to their causes, the rise of autonomic computing attests to a broader epistemie shift, the new 'perceptual regime' appears to follow an inductive (rather than deduetive) logic. Indifferent to the *causes* of phenomena, it functions on a purely statistieal observation of correlations (untainted by any underlying logic) between data captured in an absolutely non-selective manner in a variety of heterogeneous eontexts.

This translation and proeessing of reality reduced to data points and rendered predictable – in a data-rich environment such as ours, 'anything ean be predictcd' and 'erunching numbers' is 'the new way to be smart', Ian Ayres (2007) suggests – appears reassuring at different levels.

It appears reassuring especially at a time where narratives have become morc than ever suspieious due to the experienced difficulty, in a multicultural, globalised society, to find common languages and emotional harmony with our fellow human beings. Rather than understanding the biographical trajectory and exotic world view of their foreign neighbour just moving in next door, Mister and Miss Anybody are interested in knowing in advance what risk the newcomer represents for their safety and tranquillity.

At the politieal level, the turn towards autonomic computing and a statistical governance of the 'real', for its orientation towards prediction, is a gesture that is both eneouraged by and reinforcing a governmental rationality whose central figure is contingeney and where prediction and avoidance of danger have replaced the identifieation and remediation to its causes. Suffice to observe the central themes of eleetoral campaigns in the Western world since 9/11 2001 to note that the ubiquitous figure of uneertainty has become so central that providing security through the anticipation of danger has eclipsed most competing political priorities at the governmental level. Globalisation seems to have ended the time – if there has ever been such a time – where governments eould act towards an identifiable common good. How indeed eould such a common good be identified in a global society such as ours, charaeterised above all by its cultural, economic, linguistic, religious fragmentation, and by the palpable intensification of morally indefensible disparities in terms of health, wealth, and spending of scarce resources? Political, ecological, economie instability are the hallmarks of our 'risk society'. In a polity where the ubiquitous figures of contingency and risks have come to take the central space formerly (ideally) occupied by the figure of the common good, and where the prevention of inseeurity, rather than the pursuit of any collectively identified common good has become the most important role of governments, where also, individuals

are socialised through fear, a dominant phantasm is that autonomie computing, in allowing for the complex operations of data-mining and precise and dynamic profiling, will render the world and its inhabitants prcdictable. This provides the ideological background for enthusiastic support of any technology promising to help tame the chaos. The ubiquitous threat of virtual dangcr acts as a powerful ineentive to eradicate whatever, in the human being, remains uncertain, virtual, potcntial.

Epistemically, I would suggest that it implcments what Slavoj Zizek has indentified as a shift from *modern* rationality to *post-modern* rationality, that is, the gradual rcplaccment of 'transparency', allowing the understanding of profound mechanisms behind appcarances ('transparency' as such was the privilegcd mode of modernity) by 'simulacra', thc prescntation of an impenetrablc, but convivial surface. Ironically, according to the IBM vision of autonomic computing, thc system will be 'transparent' not in thc modern sense that it will allow the user to understand the decp mechanisms on which it functions, but in thc sense of a total invisibility and imperceptibility of these mechanisms.

Such a post-modern rationality fits our post-modern governmentality: in the field of security, what disappears is the nced to understand, explain and address the (too complex to grasp and address) causes of feared dangers. In the field of marketing, the logic relieves all actors from the burden of reflecting on possible discontinuities between (tcchnologically persuaded) eonsumers' demand and their actual nceds. The mobilc, constantly reorganising and readjusting images of the 'real', highly relevant to private and public bureaucratic purposes, appear evaluated increasingly according to criteria of flexibility, speed and relevance, and decreasingly according to criteria of truth, objectivity, and justice. Isn't that the sign that, in the passionatc pursuit of a phantasm of absolute predictability of events and persons, wc are building simulacra, which, aecording to Baudrillard, are nothing but a 'copy without original' or a 'representation hiding the absence of reality (hyper-rcality)'?[13]

Yet, by comparison with human observation, tcchnologically intermcdiated observation may appear more 'objective': it appears to attest to a victory of rational analysis over deceptive human sensorial pcrceptions. Involving multimodal observation, these systems detect phenomena as they surface in physical and digital spaces, and privilegc information ensuing from observation of, for cxample, the human body (making 'scnse' from involuntary bodily movements, attitudes, physiological alterations). They follow the idea that, unlike human *persons*, human *bodies* do not lie.

Moreover, thc substitution or addition of technological detection, classification, and forward-looking evaluation to human observation and judgement appears as a way to bypass ordinary biases and prejudiccs. Emotions are an essential elcment of human cognitive process, allowing individuals, unable to cope with the totality and the complexity of the world they live in, to prioritise certain (visual, sensorial, auditive,. . .) information, to ignore or forget a suffieient amount of the rest as to be able to keep reflecting and acting, which would be just impossible if they were constantly over-flown by information. The fact that some things are forgotten and

others remembered is what gives human History a kind of normativity: ordinary lives are not inscribed in History. *Exemplar* existences and deeds are, and this filtering of the 'real' through human memory and historical inseription is how humans *transmit* normative evaluations from one generation to the other. Individual and collective human memory are of eourse not objective, but that lack of objectivity has proved absolutely necessary for the functioning of individuals, and for the organisation of societies. What all this suggests is that an intensive replacement of human observation, evaluation and prediction by autonomic processes may deprive us from some possibilities to still pose normative judgements at all.

That same danger of 'depoliticisation' and 'demoralisation' is earried by 'technologieal paternalism', and ramping in any technology designed for the purpose of rendering practically impossible behaviours, attitudes or actions that were previously 'simply' forbidden by morality or law (Spiekermann and Pallas 2006: 6–18).

Besides this important aspect, one may also note that the postulated reliability and impartiality of 'autonomically produced predictions' is vulnerable to a series of reasons identified by Gandy (2010) as

1 the possible inaccuracy of data used, or incorrectness of models or routines;
2 the faet that these are correlations-based systems possibly relying on categorical variables rather than causal inquiry;
3 the fact that these systems may produce 'rational' (facially non-biased) but 'unfair' results (disparately impacting in a disfavourable manner already vulnerable groups, in contradiction with eommon views of justice or fairness);
4 the lack of ground truths to evaluate the validity of detection mechanisms aimed at preventing certain behaviours to happen, as by hypothesis, these will not happen (the detection system can thus not be 'tested'), or aimed at complying with users' unexpressed needs or preferences (as these systems indeed *influence* these needs and preferences, according to the logie of 'dynamic nominalism' exposed by Ian Hacking, which I will describe later on).

Moreover, the type of knowledge so produced is in no way 'objeetive' in the sense that one has long been used to speak of the objectivity of scientific knowledge.

1. The information systems embedded in ambient intelligent systems are not intended to observe the unique complexity of eaeh human being, but to *sort* individuals in a variety of heterogeneous eategories for the purpose of predicting their willingness or need to buy specified commodities, their risks to fill claims with health and disability insurances, the danger they represent for themselves or for others, or other propensities that marketers, insurers, law enforcement officials and many others may find useful to have. Nikolas Rose summarised the phenomenon in these words:

> reduction of complexity by numbers ean be neither ideologically nor theoretically innocent: hence the social enters the statistical through the 'interests' of those who undertake this task. The processes of simplification embody the expeetations and beliefs of the responsible technicians and officials. The discretion that they inevitably exercise is dissimulated by their elaim that their expertise, whilst indispensable, is 'merely teehnical'.
>
> (Rose 1999: 204)

2. The type of 'evidence' sustaining the knowledge so produced (the accuracy of profiles for example, and the reliability of predictions built thereon) is of a particular nature. Arguably, and quite counter-intuitively, I must eoncede, evidenee, here has less to do with a process 'which consists in one thing pointing beyond itself' – the proof found in the understanding of the eauses of phenomena – than with 'the rhetorieal sense of vividness, a gesture which refers to the immediate appeal of the fact itself'.[14] This 'postmodernist' account of the 'real' has existentialist tonalities and reminds us of Jean-Paul Sartre's statement that 'L'évidenee, e'est la présence pour la conseience de l'objet en personne (. . .) Une évidence, e'est une présence' (Sartre.1940: 201).

I am not the first scholar to notiee that, nowadays, the present tends to prevail as the unique figure of authentieity: reality has become a concept entirely comprised in the present, the temporal mode of 'real-time': '[I]ndeed, one of the emerging constants in the theorization of futurity is that it is only the present which is *real* to us whereas the past and the future are only available to us through imagination and representation' (Brown 2003: 3–21). Whereas

> [w]e are used to thinking of modernity as defined in part by future-oriented ideals of progress, increasing technologieal eontrol, and so on (. . .) modernity achieved its break with the past only by aceording the present the most profound normative and ontological privileges, and this privileging of the present eventually gave to modern man (. . .) as little reason to think of his society's future as he has to think of its past
>
> (Rubenfeld 2001:4)

> We have. . .confused Being with being-present. Nevertheless, the present *is not*; rather, it is pure becoming, always outside itself. It *is not*; but it acts. Its proper element is not being but the active or useful. The past, on the other hand, has eeased to act or be useful. But it has not ceased to be. Useless and inactive, impassive, it IS, in the full sense of the word: it is identical with being in itself.
>
> (Deleuze 1990: 55)

In the contemporarily dominant perspeetive, the current *presence* of things, rather than their spontaneous genealogy, is taken as a sign of their belonging to the domain of truth, authenticity or facts.

Indeed autonomically produced profiles render everything *actual*, present. They rely on digital, rather than human memory and therefore benefit of digital memories' virtually unlimited storage capacity in which, by default, everything is

recorded, even the most trivial events, our most trivial, conscious or even unconscious gestures, and nothing is ever forgotten.[15] As a result, the construction of profiles, of the 'digital image' of individuals is, from the perspective of the later, a heteronomous construct, at odds with what, from an individual's point of view, counts as explanation, as agency, as causality, and at odds with how the individual could give an autobiographical account of himself as a being 'always over time', never fully comprised in the present, whose virtualities are never completely actualised, as a being which is a process rather than a substance.

3. These classifications made on the basis of statistical correlations have a feedback looping effect: Ian Hacking, coining on the occasion the concept of 'dynamic nominalism', explained that when people are taken as objects of scientific or bureaucratic inquiries for a variety of purposes going from controlling them to helping them, organising them, keeping them away from places. . .such classifications affect the people classified, and these affects on people, in turn, change the classification (Hacking 2007) in ways that are contingent on the type of finality and applications of the system (which is difficult to prediet in advance). This results in the reinforcement and the 'viral propagation' of norms, of the criteria of normality and desirability against which individuals are being evaluated, with gratifications for compliant and sanctions for the others. Norms have always had a viral character though: Georges Canguilhem, already explained that the specificity of an object or fact said 'normal' by reference to either external or internal norms raises the possibility that it becomes itself taken as a reference for objects awaiting their characterisation as normal (Canguilhem 2005: 181). That viral character is only amplified by the intensification of profiling, and the ensuing phenomena of anticipative conformity, self-censorship or preferences falsification ensuing. My concern here is thus not merely the increased visibility of individuals (a traditional privacy issue). Rather, I am interested in the implications of the possibility that meaning is ascribed to even the most trivial and fugitive image, sound, movement transpiring from individual subjects. The processes through which meaning is produced follow a governmental rationality fitted to a world in which unpredictability and spontaneity (which are the virtual dimensions of human beings) are decreasingly tolerated, and where both the ubiquitous threat of the virtual danger (the risk) and the wish to adapt consumers to what the market has to offer rather than to adapt market offers to the genuine needs and preferences of consumers act as almost irresistible incentives to eradicate what, in the human being, remains uncertain, potential, *inactual*. But the actualisation of such a phantasm of a world liberated from contingency and unpredictability comes at an expensive price, as (or so I wish to argue), the potential, the *inactual*, are the modalities of individual and social existence which, through the conjugated powers of virtuality and utopia, provide the 'natural' preserves for individualisation and social change.

Technology, virtuality, utopia

Notwithstanding the unresolved(able) conceptual disagreements about its exact meaning, the 'virtual' has to do with the capacity human beings have to think and act by reference to something unfitted to the language and structure of the *actual* society, despite the inescapable fact that, as *subjects*, they are shaped by the *actual* language and structure. Virtuality, or our virtual dimension, has to do with the capacity we have to suspend any definition of ourselves, our capacity to 'think of ourselves beyond ourselves' in a cultivation of ecstasies or self-transcendence, self-overcoming or self-deconstruction.[16] This process of 'thinking ourselves beyond ourselves' is what is obviously involved in literary creativity. Michel Foucault explicitly acknowledged that this self-overcoming was among the fundamental reasons that made him write.

> Plus d'un, comme moi sans doute, écrivent pour n'avoir plus de visage. Ne me demandez pas qui je suis et ne me dites pas de rester le même: c'est une morale d'état-civil; elle régit nos papiers.
>
> (Foucault 1969: 28)

Virtuality is a concept as difficult to grasp as the concept of selfhood to which, I would argue, it is partially consubstantial, and of which it denotes the lack of substance and the essentially processual nature. What I wish to refer to is the kind of contingency and unpredictability of the form towards which individual personality may flourish. That virtuality is difficult to circumscribe. It is not a thing, but a process through which individuals become subjects, that is, tend towards an identity and personality that are never (entirely) pre-existing.[17]

> The virtual layer of a person's self, or whatever name one wishes to give to that fundamentally, and essentially, indefinable blind spot that a subject always consists of for himself, and which, one may argue, the right to privacy contributes to safeguard,[18] can arguably only be exercised in spaces or territories either mental or physical, which are not already saturated by *meaning*. A suggestive metaphor for this might be provided by the notion of 'junk DNA' present in our genomes but which does not seem to 'code' for any definite function. This 'junk DNA's crucial function, however, is to serve as a natural preserve for the evolution of our species.
>
> (Rouvroy 2008: 256)

Jean Baudrillard, posited a contemporary strategy of 'seduction' making individuals disappear into

> ever more sophisticated methods of biological and molecular control and retrieval of bodies', where 'the destiny of signs (. . .) is to be torn from their destination, deviated, displaced, diverted, recuperated, seduced. Everywhere one seeks to produce meaning, to make the world signify. We are not,

> however, in danger of lacking meaning; quite the contrary, we are gorged with meaning and it is killing us.
>
> (Baudrillard 1988: 63)

Disentangling the notion of the 'virtual' from contemporary fallacies, I wish to insist, as Gilles Deleuze and others did, that the virtual does possess a full reality, as virtual, and should not therefore be opposed, as it often is today, to the real.

> We opposed the virtual and the real: although it could not have been more precise before now, this terminology must be corrected. The virtual is opposed not to the real but to the actual. *The virtual is fully real in so far as it is virtual.* Exactly what Proust said of states of resonanee must be said of the virtual: 'Real without being actual, ideal without being abstract'; and symbolic without being fictional. Indeed, the virtual must be defined as strictly a part of the object – as though the object had one part of itself in the virtual into which it plungcd as though into an objective dimension.
>
> (Deleuze 1994: 108–12)

The virtual is as real as anything one can touch, except that it is not 'actual': it is a (potentially infinite) bundle of possibilities, living an existence which is *parallel* to the actual world of things and matters. It obviously has to do with utopia and may be supported by technology. Some artefacts indeed are *utopian*. So was the Internet in the early nineties. The cyber-space, at a time when the digital (ever since then called the *virtual*) and the physical spaces were radically separated from each other, was a place experieneed as a true 'new world', 'a home for the Cyberpunks', 'and the whole Cyber Underground', a world that 'Hackers, Phreakers and other Cyberpunks began to rule (. . .) the way they like – No laws! No rules!'[19] This utopian space without location (Foucault 1984) was a plaee where new forms of thought, new forms of cooperation and interactions could be tasted fearlessly, as the radical deterritorialisation liberated from physical limitations as well as from all types of legal, parental, religious, and other authorities constraining actions and interactions in the physical world.

The freedom then experienced in the untamed cyber-space, *parallel* to and radically disconnected from the physieal world did not survive to the gradual colonisation of the Internet by market logics, nor to the ascendency of search engine operators and other 'gatekeepers' equipped with unprecedented means to control users' experiences (deciding about the prioritisation of informational eontents provided by search engines, designing and modifying the architecture of, and applications available in, social networks,. . .). From a space for liberated thought, communication, and experience, the Internet, set aside the survival of rare sub-spaces still devoted to creativity and experimental socialisation, has beeome a privileged space for *actualisation* of eonsumerism and conformism. This evolution may be described as an invasion of the digital space by the logics and authorities typical of the physical spaee, for which the digital space came to function as an

amplifier. New 'persuasive technologies' are now emerging, notably from the Persuasive Technology Laboratory at Stanford University, with the explicit aim to shape people's opinions, preferences and attitudes, through technologies taking advantage of social dynamics and amplifying or weakening their effects and affects beyond the individual user's expectations and anticipations.[20] Technological architectures such as Facebook and other social networks, which people can access from anywhere at any time, from their laptop or their mobile phone, are well suited to the operation of such 'massively inter-personal persuasion'.[21] This is illustrative of how the same utopian technologies may turn into technologies of power. Altering both individual behaviour and motivation and the informational structures within which individuals behave, persuasive technologies appear to cumulate the strength of disciplinary and actuarial regimes.[22] The next stage in the development of our information society further blurs the separation between digital and physical realities. Imagining these detection, classification and forward-looking evaluation technologies, functioning, when useful, on massive inter-personal persuasion, becoming truly pervasive, ubiquitous and 'transparent' in the sense given by IBM to 'transparency' ('The system will perform its tasks and adapt to a user's needs without dragging the user into the intricacies of its workings'), is rather frightening. Projecting ourselves in such a dystopian picture allows, however, identifying what we are not ready to pay for living in a technologically tamed universe. Here we can at last pose a normative judgement. Against this dystopian projection, one may venture on the intimidating battlefield of values.

In a letter to Karl Jaspers, in which Hannah Arendt confessed herself how uncertain she was of what she wrote, she recounts:

> What radical evil is I don't know, but it seems to me it somehow has to do with the following phenomenon: making human beings as human beings superfluous – not using them as means, that does not infringe upon their humanity but merely upon their dignity of human beings, but rendering them superfluous despite their quality of being human. This happens as soon as unpredictability – which, in human beings, is the equivalent of spontaneity – is eliminated.
>
> (Arendt 1993: 166)

Infringing upon a being's humanity supposes the elimination of that being's unpredictability or spontaneity. It seems to me that this insistence on unpredictability and spontaneity as essential elements of what makes a being human is extremely important. It is anyway highly relevant for what I wish to say about the 'virtual' as an essential dimension of human beings: that virtuality – as unpredictability (even, up to a certain extent, for the subject himself), as spontaneity – appears as the hard eore of what deserves the protection of the law not only, or even not necessarily, because failing to protect the unpredictability or spontaneity would infringe upon human dignity, but because it would directly infringe upon humanity itself, upon that which identifies beings as humans.

The 'virtual' layer was similarly identified by Gilles Deleuze as one of the immanent characteristics of human beings. I understand it as implying the fact for the human being, of never being fully comprised in the present, of always being 'over time'.

> In any case, the relation between the actual and the virtual is not that which one can establish between two actuals. The actuals imply already constituted individuals, and determinacies by ordinary points; whereas the relation between the actual and the virtual shape an individuation in action or a singularization by remarkable points to be determined in each case.
>
> (Deleuze 1996: 185, my translation)

This has much to do with what Michel Foucault called the process of subjectivation: the path through which individuals *become* subjects, a tension between the two poles constituted by, on the one hand, the self that I am, which I never completely possess – dependent as I am on interactions with others, on my capacity to give others and account of myself,[23] or to be interpellated by others and, on the other hand, the self I might, I may, I wish to become in the future, and which I cannot know in advance.

This unpredictability of human individuals, their spontaneity, is not merely worth preserving because of its contribution in making us human; it is also a necessary precondition to the vitality of society as a whole, which must remain open to changing its own basic rules and structures whenever these remain too far removed from the ideal of justice that people are able to imagine. Virtuality is to the individual human being what utopias are to societies. They are preserves for the 'flourishing of individual personality', and for fundamental changes in our social existence. This articulation between virtuality and utopia appears, in a subtle form, in Frederic Jameson's writings:

> Utopian form is itself a representational mediation on radical difference, radical otherness, and on the systemic nature of social totality, to the point where one cannot imagine any fundamental change in our social existence which has not first thrown off Utopian visions like so many sparks from a comet. The fundamental dynamic of any Utopian politics (or of any political Utopianism) will therefore always lie in the dialectic of Identity and Difference, to the degree to which such a politics aims at imagining, and sometimes even at realizing, a system radically different from this one.
>
> (Jameson 2005: xii)

Autonomic computing, as a vision, is an ideological vision. Together with the increasingly 'intelligent' and 'autonomic' systems it is aimed to reinforce, it crystallises the dominant technological, economical and political projections or world views of our western time, but the specific representational regime it implements may, this time, make it more difficult for individuals and groups to dissent.

Technologies blurring the separation between the 'physical' and the 'digital' on the one hand, and between the 'actual' and the 'virtual' on the other hand, unavoidably reconfigure human experience, setting new regimes of visibility and intelligibility and, as a consequence, impact on the terms through which one should think of power relations in society. All this attests to the actuality of Michel Foucault's writings on governmentality:

> As for all relations among men, many factors determine power. Yet rationalization is also constantly working away at it. There are specific forms to such rationalization. It differs from the rationalization peculiar to economic processes, or to production and communication techniques; it differs from that of scientific discourse. The government of men by men – whether they form small or large groups, whether it is power exerted by men over women, or by adults over children, or by one class over another, or by a bureaucracy over a population – involves a certain type of rationality. It doesn't involve instrumental violence.
>
> (Foucault 1990: 84)

> Consequently, those who resist or rebel against a form of power cannot merely be content to denounce violence or criticise an institution. Nor is it enough to cast the blame on reason in general. What has to be questioned is the form of rationality at stake. The criticism of power yielded over the mentally sick or mad cannot be restricted to psychiatric institutions; nor can those questioning the power to punish be content with denouncing prisons as total institutions. The question is: how are such relations of power rationalised? Asking it is the only way to avoid other institutions, with the same objectives and the same effects, from taking their stead.
>
> (Foucault 1990: 85)[24]

Conclusion

The hypothesis I have sustained in this very tentative chapter is that the virtual dimension of individual human personality, which is constitutive of subjectivity itself, is incompatible with the actualisation – through technological or other means – of a depoliticised, statistical governmental rationality indifferent to the causes of phenomena and chiefly oriented towards the annihilation of contingency. I have also defended the idea that the eradication of virtuality (or subjectivity) is incompatible with the emergence of utopias whereas utopias have a crucial role to play in sustaining the vitality of deliberative democracy. Thinking beyond oneself, individually, and beyond current societal configuration, collectively, are the indispensable reflexive capabilities allowing for individual self-determination and collective self-government. Autonomic computing may enhance or decrease these capabilities, depending on the governmental (or bureaucratic) rationality it is meant to serve.

Let us try not to miss the target here: choosing which technological evolution we wish to emerge in our life-world cannot be done without first having chosen which governmental rationality one wishes to have ruling our society. The debates must identify what the central figure of that governmental rationality should be.

Currently, the focus on contingency and risk minimisation has shadowed most other political goals. This obsession with contingency and virtual danger has also come to be raised by those who would like to see a 'right to security' explicitly acknowledged the status of a fundamental right, competing or even pre-empting the fundamental right to privacy, despite the obvious fact that the current regime of fundamental rights and liberties, as well as, for example, criminal law and the general principle of legal certainty (*sécurité juridique*) are already in place and ensuring a certain level of security. However, the rhetorical strategy followed by the advocates of an autonomous 'right to security' is aimed at justifying in advance systematic interferences by public authorities with the exercise by individuals of their right to privacy. The 'right to security' is in fact not a right providing individuals a legal basis to impose certain duties to act or certain abstentions on either the State, government officials, or fellow citizens. Rather, such a fundamental 'right to security' would amount to providing the State and government officials an advance and permanent justification for infringing upon fundamental individual rights and liberties, such as privacy, or freedom of expression, even in ordinary circumstances where no emergency threat would justify the temporary instauration of a 'state of exception', and even through means (including technological ones) which are not necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others. Said otherwise, making a 'right to security' prevail over the right to privacy and other fundamental rights and liberties would radically jeopardise citizens' security (not to even speak of aliens), exposing them to the unconstrained and arbitrary surveillance, control, monitoring by law enforcement authorities and other officials. There are arguments to believe, indeed, that whatever technology will become available to intensify the scrutiny of individuals in all the dimensions of their life will find a market and be deployed, if only because these technological systems may be more cost-effective than the human workforce, and because information, especially when it allows forward-looking evaluation – or, even better, the orientation – of individual tastes, choices, behaviours, etc. has become both an invaluable asset for governments and commercial enterprises and the privileged yardstick of power to remote control the population.

There is now a crucial need to transcend the blinding choice between both the misled diabolization of technology and its uncritical endorsement. The issue about technology is to understand the kind of governmental rationality it may further sustain, to resist and enter the political struggle to counter it when it may lead us to a situation incompatible with the vitality deliberative democracy, and, together with other disciplines in human sciences, to cooperate with technology designers

and politicians as to build an informational infrastructure allowing for the flourishing of human virtualities, even when these virtualities may give rise to radically new and unexpected individual and societal forms of existence. Throwing the dice is something that must, from time to time, be dared.

Notes

1 www.research.ibm.com/autonomic/overview/elements.html
2 I do not endorse the qualification of a turn towards autonomic computing as a 'paradigm shift' in a Kuhnian sense, the figure of the 'paradigm shift' is used by IBM essentially as an advertising metaphor.
3 See Sarat (1995: 15).
4 See Hayles (2006: 140): 'Enmeshed within this flow of data, human behavior is increasingly integrated with the technological nonconscious through somatic responses, haptic feedback, gestural interactions, and a wide variety of other cognitive activities that are habitual and repetitive and that therefore fall below the threshold of conscious awareness. Mediating between these habits and the intelligent machines that entrain them are layers of code. Code, then, affects both linguistic and nonlinguistic human behavior. Just as code is at once a language system and an agent commanding the computer's performances, so it interacts with and influences human agency expressed somatically, implemented for example through habits and postures. Because of its cognitive power, code is uniquely suited to perform this mediating role across the entire spectrum of the extended human cognitive system. Through this multilayered addressing, code becomes a powerful resource through which new communication channels can be opened between conscious, unconscious, and nonconscious human cognitions.'
5 See (Fuller 1994: 741).
6 Alford and Friedland (1985: 165): 'the legitimating principles for different institutions, and their conflicts constitute the society and help explain its structure and changes.'
7 I opted for not considering autonomic computing independent from the applications in which this 'new paradigm' may be involved.
8 I am indebted to Massimo Durante for this emphasis on identity as something that may only be 'said' by a third person.
9 Dean (1999: 2): 'The term *governmentality* seeks to distinguish the particular mentalities, arts and regimes of government and administration that have emerged since "early modern" Europe, while the term *government* is used as a more general term for any calculated direction of human conduct. Typical of his flair for a catchy and perspicacious phrase, Foucault redefined "government" in a fashion compatible with its sixteenth- and seventeenth-century uses as the "conduct of conduct", i.e. as any more or less calculated means of the direction of how we behave and act.'
10 Ontogeny is the study of the spontaneous process through which the same living organism undergoes structural changes while remaining organised in a way that ensures that it remains the 'same' organism. See Maturana and Varela (1986).
11 This has probably never been more obvious than today, given the shifts experienced in the modes of knowledge production: rather than merely discovering nature's secrets, scientists and technology designers increasingly produce knowledge and technological devices in the context of problems and applications defined by funding agencies concerned with specific agenda (such as European competitivity, bureaucratic efficiency or business profitability).
12 Castel (1984: 237–38): 'problematisation is not the representation of a pre-existing object, or the creation through discourse of an object that does not exist. It is the totality of discursive and non-discursive practices that brings something into the play of truth and falsehood and sets it up as an object for the mind.'

13 See, however, Deleuze (1969: 302–3): 'Le simulacre n'est pas une copie dégradée, il recèle une puissance positive qui nie *et l'original et la copie, et le modèle et la reproduction*.'
14 The distinction is recalled by Shaffer (1992: 328), referring, for the description of the first notion of evidence, to Hacking (1975).
15 On this issue, see our previous work, Rouvroy (2009).
16 Scott (1992: 106–7): 'our subjectivity has been formed in a process of "subjectivation" in which we have come to relate to ourselves by values which overlook our own fragmented histories and thereby carry a largely unconscious inclination towards totalization and fascism. Instead of thinking of him as uncommitted and, by thinking this way, holding our thought within the framework of the committed or uncommitted subject, one can think of *attunement* to something that is not fixable within the boundaries of subjects and representations. I do not know how to speak of something so out of the bounds of representation and subjectivity.'
17 In that sense, the contemporary injunction to 'be oneself' is nonsensical.
18 At least according to legal scholars (e.g. Rubenfeld 1989) and courts (e.g. the German Supreme Court) acknowledging an anti-totalitarian concept of privacy that is protective of the individual's right to freely develop his/her personality, and the correlative need for some level of 'seclusion' as a precondition to the flourishing of individual personality.
19 Mad Maniac (1996), http://project.cyberpunk.ru/idb/history.html.
20 See B.J. Fogg (2008: 23–34).
21 About the Obama campaign on Facebook, read www.facebook.com/note.php?note_id=46049223571&id=8417788415&index=0).
22 See Simon (1988: 773): 'Disciplinary practices focus on the distribution of a behavior within a limited population (a factory workforce, prison inmates, school children, etc.). This distribution is around a norm, and power operates with the goal of closing the gap, narrowing the deviation, and moving subjects toward uniformity (workers are to be made more efficient and reliable, prisoners more docile, school children more attentive and respectful). Actuarial practices seek instead to map out the distribution and arrange strategies to maximise the efficiency of the population as it stands. Rather than seeking to change people ("normalize them", in Foucault's apt phrase), an actuarial regime seeks to manage them in place.'
23 Butler (2005: 136): '[T]o be undone by another is a primary necessity, and anguish to be sure, but also a chance – to be addressed, claimed, bound to what is not me, but also to be moved, to be prompted to act, to address myself elsewhere, and so to vacate the self-sufficient "I" as a kind of possession. If we speak and try to give an account from this place, we will not be irresponsible, or, if we are, we will surely be forgiven.'
24 See also Curtis (2002: 505–33).

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